

APPENDIX A

LIST OF PROPOSED WELL LOCATIONS

<u>Name</u>	<u>Number</u>	<u>Legal Location</u>	<u>Lease Number</u>
Existing Private Wells:			
Paradox	5-7W	T8S, R41E, S 7, SWNW	
Paradox	5-7F	T8S, R41E, S 7, SWNW	
Proposed Federal Wells:			
Long Federal	5-6W	T8S, R41E, S 6, Lot 5 (SWNW)	MTM88704
Long Federal	11-6F	T8S, R41E, S 6, NESW	MTM88704
Long Federal	11-6W	T8S, R41E, S 6, NESW	MTM88704
Long Federal	13-6F	T8S, R41E, S 6, Lot 7 (SWSW)	MTM88704
Long Federal	13-6W	T8S, R41E, S 6, Lot 7 (SWSW)	MTM88704
Long Federal	15-6F	T8S, R41E, S 6, SWSE	MTM88704
Long Federal	15-6W	T8S, R41E, S 6, SWSE	MTM88704
Long Federal	5-6F	T8S, R41E, S 6, Lot 5 (SWNW)	MTM88704
Proposed Private Wells:			
Paradox	1-7W	T8S, R41E, S 7, NENE	
Paradox	1-7F	T8S, R41E, S 7, NENE	
Paradox	3-7W	T8S, R41E, S 7, NENW	
Paradox	3-7F	T8S, R41E, S 7, NENW	
Paradox	7-7W	T8S, R41E, S 7, SWNE	
Paradox	7-7F	T8S, R41E, S 7, SWNE	
Paradox	11-7W	T8S, R41E, S 7, NESW	
Paradox	11-7F	T8S, R41E, S 7, NESW	

APPENDIX B
SPECIAL STATUS SPECIES AFFECTS DETERMINATIONS
SUMMARY TABLES

Federally Listed Threatened and Endangered Species and Species Proposed for Listing

Species	Status	In Range (yes/no)	Habitat Present (yes/no)	Affects Determination (brief rationale)
Bald Eagle	T	yes	yes	May affect (see discussion sections 3.10, 4.2.10 & 4.3.10)
Least tern	E	yes	no	
Piping Plover	T	no		
Whooping Crane	E	no		
Black-footed ferret	E	yes	no	
Canada Lynx	T	no		
Gray wolf	E	no		
Grizzly Bear	T	no		
Bull Trout	T	no		
Pallid Sturgeon	E	no		
Spalding's Catchfly	P	no		
Ute Ladies'-tresses	T	no		
Water Howellia	T	no		
White Sturgeon (Kootenai River Population)	T	no		

**SPECIAL STATUS SPECIES AFFECTS DETERMINATIONS
SUMMARY TABLES**

BLM (Montana and Dakotas) Designated Sensitive Species

BIRDS			
Species	In Range (yes/no) 1	Habitat present (yes/no) 2	Effects Determination (brief rationale) 3
Black tern	yes	no	
Blue-gray gnatcatcher	no		
Burrowing owl	yes	no	
Common loon	no		
Dickcissel	yes	no	
Ferruginous hawk	yes	no	
Flammulated owl	no		
Franklin's gull	no		
Golden eagle	yes	no	No golden eagles/nests observed during surveys
Greater sage grouse	yes	yes	See discussion sections 3.10, 4.2.10 & 4.3.10
Harlequin Duck	no		
Loggerhead shrike	yes	yes	See discussion sections 3.10, 4.2.10 & 4.3.10
Long-billed curlew	yes	no	
Chestnut-collared longspur	no		
McCown's longspur	no		
Marbled Godwit	no		
Mountain plover	no		
Northern goshawk	yes	no	Incidental observations on Ashland District of CNF
Peregrine Falcon	yes	yes	Possible migrant
Sage thrasher	no		
Baird's sparrow	yes	no	
Brewer's Sparrow	yes	yes	See discussion sections 3.10, 4.2.10 & 4.3.10

LeConte's sparrow	no		
Nelson's sharp-tailed sparrow	No		
Sage sparrow	yes	yes	See discussion sections 3.10, 4.2.10 & 4.3.10
Sedge wren	no		
Sprague's pipit	no		
Swainson's hawk	yes	yes	See discussion sections 3.10, 4.2.10 & 4.3.10
Trumpeter swan	no		
White-faced ibis	no		
Willet	no		
Wilson's phalarope	no		
Black-backed woodpecker	no		
Three-toed woodpecker	yes	no	Documentation in counties west of project
Red-headed woodpecker	no		
White-faced ibis	no		

MAMMALS			
Species	In Range (yes/no) 1	Habitat present (yes/no) 2	Effects Determination (brief rationale) 3
Townsend's big-eared bat	yes	yes	Very little known of this species
Spotted bat	yes	yes	Very little known of this species
Fringe-tailed myotis	no		
Fringed myotis	no		
Long-legged myotis	yes	yes	Very little known of this species
Long-eared myotis	yes	yes	Very little known of this species
Northern myotis	no		
Pallid bat	no		
Fisher	no		
Great Basin pocket mouse	no		

North American wolverine	no		
Black-tailed prairie dog	yes	no	
White-tailed prairie dog	no		
Pygmy rabbit	no		
Swift Fox	yes	no	
Western spotted skunk	no		

REPTILES and AMPHIBIANS			
Species	In Range (yes/no) 1	Habitat present (yes/no) 2	Effects Determination (brief rationale) 3
Boreal/Western toad	no		
Coeur d'Alene salamander	no		
Great Plains toad	yes	yes	Very little known of this species
Greater short-horned lizard	yes	yes	Very little known of this species
Milk Snake	no		
Northern leopard frog	yes	no	
Plains spadefoot	yes	yes	Very little known of this species
Snapping turtle	yes	yes	See discussion sections 3.10, 4.2.10 & 4.3.10
Spiny softshell	yes	yes	See discussion sections 3.10, 4.2.10 & 4.3.10
Western Hog-nosed snake	no		

FISH			
Species	In Range (yes/no) 1	Habitat present (yes/no) 2	Effects Determination (brief rationale) 3
Arctic grayling	no		
Blue sucker	no		

Northern redbelly X Finescale dace	no		
Paddlefish	no		
Pearl dace	no		
Sauger	yes	yes	See discussion sections 3.10, 4.2.10 & 4.3.10
Shortnose gar	no		
Sicklefin chub	no		
Sturgeon chub	no		
Westslope cutthroat trout	no		
Yellowstone cutthroat trout	no		

- 1) If project is not within the range of the species no determination of habitat presence is needed.
- 2) If habitat is not present no effects determination is needed.
- 3) Detailed Effects Determination is provided in the narrative of Environmental Assessment

BLM (Montana and Dakotas) Designated Sensitive Species

Plant Species

Known sites in project area

Agastache cusickii	no
Arabis fecunda	no
Astragalus ceramicus var. apus	no
Astragalus geyseri	no
Astragalus scaphoides	no
Astragalus terminalis	no
Camissonia andina	no
Camissonia parvula	no
Carex crawei	no
Carex parryana var. idahoensis (C. idahoensis)	no
Cryptantha scoparia	no
Elymus flavescens (Leymus flavescens)	no
Eriogonum salsuginosum (Stenogonum salsuginosum)	no
Lesquerella carinata var. languida	no
Lesquerella lesicii	no
Lesquerella pulchella	no
Lomatium attenuatum	no
Malacothrix torreyi	no
Nama densum	no
Oenothera pallida var. idahoensis (O. pallida ssp. pallida)	no
Penstemon lemhiensis	no
Penstemon whippleanus	no
Quercus macrocarpa	no
Shoshonea pulvinata	no
Sphaeromeria argenta	no
Taraxacum eriophorum	no
Thalictrum alpinum	no
Thelypodium paniculatum	no

APPENDIX C

SOCIAL AND ECONOMIC ASSUMPTIONS

The following are the Social and Economic assumptions common to all alternatives:

The impact analysis is based on the assumptions used in the MT FEIS, 2003 at pages 4-8, 4-111, 4-112 and the ZurMehlen, 2001 and the Langhus, 2001 data for employment and income estimates. The Montana CBNG wells have an average life of 15 years and are expected to produce .3 BCF (MT FEIS Vol. II, MIN-16). Exploration wells do not produce income and ten percent are dry holes. A gas price of \$4.00 per thousand cubic feet is assumed for this analysis.

The employment and income created are related to the project phase. The number of jobs and the associated wages for each phase are estimated as follows (ZurMehlen, 2001): 7 jobs and payroll of \$365,000 per 160 wells for exploration and development plus \$6,600 per well for 42 contract well drillers and pipeline installers (Langhus, 2001); 9 jobs and payroll of \$345,000 per 160 wells for production; and 12 jobs and payroll of \$415,000 per 160 wells for abandonment. Typical drilling operations, whether exploration or production, would require 3 to 5 days with an additional 2 to 3 days for completion work. A maximum 7 to 8 people would be present at any one time during the construction phase.

All dollar amounts are reported in 2001 dollars with no adjustments for inflation for comparison with the MT FEIS analysis.

Royalty rates for all lease ownerships, Federal, State and private, are assumed at 12.5 percent of well head value. Montana receives 50 percent of the Federal royalties paid. Montana taxes all gas production at 9.3 percent of well head value, after the first year. Private royalties are taxed at 15.1 percent. On average, 50 percent of the production taxes are returned to the local governments.

Impacts to livestock operations could result from construction of the well pad sites, groundwater drawdown and produced water. However, the 80 acre density of the well pads and the temporary nature of the activities associated with CBNG drilling and testing, should not result in a reduction of AUM's to individual operators and suitable produced water can be used for livestock. (See Livestock section). Also, the MT-BOGC requires CBNG operators to offer water mitigation agreements to owners of water wells or natural springs adversely impacted by CBNG development. (See Hydrology section)

Direct economic impacts include changes in personal income and employment; lease royalties; income and production taxes. Indirect impacts would include induced economic activity from local purchases for supplies, equipment and services.

Social impacts could include changes to social well being due to changes in personal income and employment and possible effects to private surface owners whose land is underlain by federal minerals.

APPENDIX D

MONITORING REQUIREMENTS FOR CULTURAL RESOURCES

As per mitigation requirement #1 of the Proposed Action Alternative (C), the cultural resources monitoring requirements are the following:

- Well 11-6: Monitor construction of Well Pad and proposed flowline and underground power to the Tongue River Road.
- Well 15-6: Monitor trenching operations for powerline and flowline to Tongue River Road and excavation of reserve pit.
- Well 13-6: Monitor excavation of reserve pit and trench for power and flowline to the 3-7 Well.
- Well 5-6: Monitor excavation of the reserve pit and any road blading from the proposed gate to the well pad.
- Paradox Loop Facility: Monitor construction of facility pad, and pits, and road/infrastructure corridor trench from the Tongue River Road to the facility pad. The proposed trench for the buried waterline from the facility to the proposed outfall along the Tongue River also shall be monitored.
- Tongue River Road Corridor. Monitor trenching operations from the where the proposed infrastructure corridor meets the road at the 15-6 road to the proposed corridor for the Paradox Loop Facility.